

ER PROGRAM DATA ASSESSMENT SUMMARY REPORT FORM

	E88-2939, E88-30	68.	Area 2 - 881 Hill	side:)
Batc	ch No. E88-3080/3rd Quar	rter 1988	Site Area 4 - Mound	Area 5 - East Trenches
Lab	oratory <u>RFP - 881 General</u>	ral Labs	No. of Samples/Mati	ix 38/Water
	· · · · · · · · · · · · · · · · · · ·		Reviewer Org. <u>Tech</u>	Law, Inc.
43-8	<u>87, 3-87, 8-87, 25-87, 45-8</u>	7, EB(7/22/88), 25	87, TB(7/19/88), FB(7/19/88), 69- 5-87D, 3-74, 36-87, 39-86, 32-87, 7, 23-87, 34-86, 35-86,1-74, TB(8	TB(8/23/88), FB(8/23/88),
			yses by Liquid Scintillation ssessment Summary	
			Commen	ats
1.	Holding Times	V		
2.	Initial and Continuing Calibrations	<u>V</u>		
3.	Blanks	V	_	
4.	Lab Replicates	V		
5.	Lab Control Samples	<u>v</u>	_	· · ·
6.	QC-LLD	V		
7.	Quench and Efficiency	V	_	
8.	Sample Calculations	V	_	
9.	Overall Assessment			
	 V = Data had no problems. A = Data acceptable but qualified du R = Data rejected. X = Problems, but do not affect data 	-		
Data	a Quality: <u>Data contained in </u>	n this batch were revie	ewed and found to be valid.	
				A Commence of the Commence of
				ide las life particular and the last control of the last control o
			ADMIN RECORD	"REVIEWED FOR CLASSIFICATION By R. B. Hoffman
,		1	By Awge H. Seclock Date @ 6/22/96	

Action Items: None		 	
		 · · · · · · · · · · · · · · · · · · ·	
Comments: None	ı		
11010			
Note: Data Summary Tables are attached.			
^ ^			_
Marilyn Ayers			<u>11, 1989</u>
Reviewer Signature		 Date	

Radiochemical Data Completeness Checklist for Tritium Analyses of Soil and Water

A. Yes Case Narrative

Yes Abnormalities explained

Yes Matrix Problems explained

Yes Instrument problems explained

Yes Improper collection, storage, preservation, container explained

Yes Hold times met, explained if not met

B. Yes Initial and Continuing Calibration Data Package

Yes Detector ID with Program Settings

Yes Date of Performance Check

Yes Batch Number

Yes NBS Traceable Standards with Certification Date and DPMs

Yes Quench Monitor Values and CPM for Standard used to check long term performance of cocktail and instrument

Yes Background-Blank vials CPM Results

C. Yes Blanks Data Package

Yes Detector ID

Yes Date Analyzed

Yes Collection Date

Yes Sample IDs counted with blank

Yes Detection Level reported

D. Yes Lab Replicate Data Package

Yes Detector ID

Yes Date Analyzed

Yes Collection Date

Yes Value obtained for sample, replicates, mean values

Yes Count Durations of samples and backgrounds

Yes Statistical analysis of Range, Control Limits

E. Yes Lab Control Samples Data Package

Yes Sample ID, Detector ID

Yes Values obtained, true value of sample

Yes Statistical Analysis of Results

F. Yes Lower Limits of Detection

Yes Background measurements

Yes Detector ID

Yes Date of count

Yes Calculated LLD comparison with Required Detection Level

G. Yes Quench and Efficiency

Yes Quench Monitor used
Yes Quench Monitor Values and Efficiency Values
Yes Detector ID
Yes NBS traceable standards with certification date and DPM
Yes Batch number and sample IDs; Efficiency standard and backgrounds

Yes Volume added to cocktail Yes Cocktail used

Yes Vials used

H. Yes Sample Data Package

Yes Printed Report of results for sample, reruns
Yes Computer calculations
Yes Analyst initials

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

Page 1 of E88-2939/3rd Quarter 1988 TABLE #:

S

SITE NAME: Rocky Flats Plant - 881 Hillside

		30 33			70.86		ĺ	2.87		189	62-86		4-87			<u>e</u>		۲	æ		8	98-69		52-87	7	
Sample Location		30.00	90 95		2020 70 86	70.96	T	2030-2-87	2	18	29.462-B6	60	2939-4-87	4-87		2939-TB	<u>ا</u>	2	2939-FB	_	8	2939-69-86	98	2935	2939-52-87	
Sample Number		2000			24460		Ť	7/4 4/00		i jà	7/15/8B		7/15/88	8		7/19/88	6	-	7/19/88		1	7/19/88		7/19/88	88	
Sample Date		//14/88	او		2	ا		00/41//			3							+						1		
Matrix		Water			Water			Water		<u></u>	Water		Water	ا		Water		1	warer		}	WEIGH		WEE		
0000	占 5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	*	8	Val.	\	8	Val.	·/+	_ <u>></u> 8	Val. +/-	8	Val.	*	0d /+	Val.	-/+	DO	Val.] -/+	_ oa	Val. +	+/- DQ		Val. +/-	8
Gross Albha	2	+						H	Н	H	$\left \cdot \right $	H							$\mid \mid$				+		\dashv	4
Gross Beta	4									+	-	-	_	_	1		1	\dagger	+	+	+	+	+	+	\downarrow	\perp
Total Strontium	-							1	+	\dashv		1	_	1	1		1	\dagger	\dagger	\dagger	\dagger	\dagger	+	+	1	1
Total Cestum	-							1	+	\dashv	1	-	1	\downarrow	1	\int	1	†	\dagger	\dagger	\dagger	+	+	+	+	1
Radium 228	-									- 1	-	-	- 1				1	 - -	-	+	•	-	╬	-		
Tritium	\$	400 200 U		>	200 U		>	230	8	<u>8</u>	D022	>	2101	_	>	2100	1	× >	2007	\dagger	र >	3	1	3	5	\
Uranium 234 & 233	9.0							1	-	\dashv	$\frac{1}{1}$	-	1	1	_			†	†	\dagger	\dagger	\dagger	+	+	\downarrow	1
Uranium 235	9.0						7	1	\dashv	\dashv	-	+	4	1	1		1	\dagger	\dagger	\dagger	\dagger	+	+	+	\downarrow	\perp
Uranium 238	9'0							1	1	+	+	+	1	1	1			†	\dagger	+	\dagger	+	+	+	+	1
Plutonium 239 & 240	0.01								-	+	+	+	-	1	1			†	\dagger	†	\dagger	+	\dagger	$\frac{1}{1}$	\downarrow	1
Americium 241 & 242	0.01							1	1	+	-	\downarrow	\downarrow	1	\downarrow			\dagger	†	+	\dagger	\dagger	+	+	-	\downarrow
Radlum 226	0.05								\dagger	\dagger	+	\downarrow	1	_	1			†	+	\dagger	\dagger	\dagger	+	+	1	_
Gamma scan									+	+	1	\downarrow	1	\downarrow	1			†		\dagger	\dagger	+	1	\downarrow	-	1
Other Isotopes					_			1	-	\dashv	-	\downarrow	-		1			1	1	-	\mid	$\frac{1}{2}$	$\left \right $	$\frac{1}{2}$		

Exceeds calibration range.

Indicates the parameter was not detected above the Instrument Quantitation Limit

Quantitation is approximate due to limitations identified during the quality control review

Acceptable with qualifications

Rejected

< Œ

2939q3/rk12

Data Qualifier

Valid

g >

Value is rejected due to other contractual criteria examined during the quality control review Value is rejected due to blank contamination identified during the quality control review

Detection Limit in PlooCuries per Liter (pCIA.)

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (pCI/L)

E88-2939/3rd Quarter 1988 TABLE #:

Page 2 of 5

SITE NAME: Rocky Flats Plant - 881 Hillside

		17.04		5.87			9-74			43-87		3-	3-87		8-87	7		45-87	7		EB					
Sample Location	- 5	77-01		Š	2010-5-87		2939-9-74	9-74		2939-43-87	787	3	2939-3-87	_	82	2939-8-87 TB	118	293	2939-45-87		2939-EB	8				
Sample Number	1	7.50.40B		7/20/88	88/		7/21/88	 		7/21/88		1/2	7/22/88		7/2	7/22/88		7/22/88	98/		7/22/8	۵				
Sample Date		Water		Water	ا		Water			Water		3	Water		×	Water		Water	θĽ		Water					
Matrix	1		3	-	-		₩	-	2	200	7,7	2	Je/S	7	DO Val.		0 <u>0</u>	- Val	‡	g	Val.	\	8			
Parameter	рСИ	Val. +/-	8	- G	÷	3	-		3		-	3	\vdash	-		-	_	-	_	L						
Gross Alpha	2		_	-	-	1					1	+	\dagger	+	+	+	+	+	+	\downarrow				T	T	
Gross Beta	4				-						†	\dagger	+	+	+	+	+	+	\downarrow	1					T	
Total Strontlum	<u>-</u>		_	-	-	4					1	\dagger	\dagger	+	+	+	+	\downarrow	1	1				Γ	T	
Total Cesium	-		4	-	_	4	\downarrow				†	\dagger	\dagger	\dagger	+	+	╀	+	1	1				T		
Radium 228	-			+	4				1	1	1		-	\dagger	200	-		2101	-	>	2201		>	T		
Tritium	400 210 U	10 U	^	V 210 U	5	>	230 U		>	2200	1	>	2002	\dagger		1	1	1	,	1						١
Uranlum 234 & 233	9.0			4	4	1	\downarrow				1	+	\dagger	\dagger	+	+	+	+	\downarrow	1						
Uranlum 235	9.0		_	4	-	_					1	\dagger	\dagger	\dagger	\dagger	╁	1	\perp	╀					Γ		
Uranium 238	9.0		4	4	4	1	\downarrow	1			\dagger	\dagger	\dagger	\dagger	+	+	╀	1	+	\downarrow	L				Γ	
Plutonium 239 & 240	0.01	-	-	+	+	4	\downarrow				†	\dagger	\dagger	\dagger	+	+	+	\mid	L	-	L			Γ	Γ	
Americium 241 & 242	0.01	-	4	4	+	4	1	1			T	+	\dagger	\dagger	+	+	-	+	-	L						
Radium 226	0.05		+	\dashv	4	4	1	1			T	\dagger	t	\dagger	+	╁	+	+	-	-	L					
Gamma scan		-	\dashv	-	+	4	\downarrow	1			1	\dagger	\dagger	\dagger	-	\dagger	+	╀	ŀ	-	L	L				
Other Isotopes		_	\dashv	\dashv	\dashv	\downarrow	\downarrow				1	1	1	1	-	1	$\left\{ \right.$	$\left\{ \right.$								
																c	č	Data Onalifier	iii							
and any any and any any)	3	5	2							

Exceeds calibration range.

indicates the parameter was not detected above the Instrument Quantitation Limit

Acceptable with qualifications

Valid

g >

Rejected

∢ Œ

2939q3/rk12

Quantitation is approximate due to limitations identified during the quality control review

Value is rejected due to other contractual criteria examined during the quality control review Value is rejected due to blank contamination identified during the quality control review

ш⊃¬.∶ Ы

Detection Limit in Placeurles per Liter (pCiA.)

Date: 10/11/89

Page 3 of 5 RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCVL)

E88-3068/3rd Quarter 1988

SITE NAME: Rocky Flats Plant - Mound

	98	Ę		20 07			34.86		۴	35.86		+	1-74					<u>E</u>			17-87	7		L		
Sample Location	78-77	چ اچ		3		1	3		Ť			. [8			1 6	100		200	000		900	70 47 0200				
Sample Number	300	3068-22-87	_	3000	3068-23-87		3068-34-86	4-86	2	3068-35-86	SE I	3	3068-1-74	4	Ş	3000		န္	3000-12		3					١
Semple Date	1/8	8/12/88		8/12/88	88		8/12/88	_	3	8/12/88		à	8/12/88		8	8/16/88		8	8/16/88		8/16/88	88				
Matrix	M	Water		Water	Ļ		Water		_	Water		<u>×</u>	Water		ž	Water		Water	ē		_					
Wallin	DI S	14	2	N N	+	8	V.	‡	g	Val.	+	<u>></u>	Val. 4	7+	DQ Val.		g ;	Val.	+	8	Val.	+	g			
Parameter	†	+	Н	_	\vdash			r		\mid	ŀ	-	\vdash	-	-	\vdash	\vdash	_								
Gross Alpha	2	-	4	1	1			1	†	\dagger	\dagger	+	\dagger	+	\dagger	╀	+	+	╀	\downarrow		L	-			
Gross Beta	4		4	4				1	1	+	+	\dagger	+	\dagger	+	+	+	+	+	\downarrow	1	1	-	L	L	1
Total Strontlum	1		4	-				1	7	1	+	+	+	+	+	╁	+	+	+	╀	+	1			\perp	\perp
Total Cesium	1			4				1	1	1	+	\dagger	\dagger	+	+	+	+	+	+	\downarrow	1	1	-		1	1
Radium 228	-								1	1	+	\dashv	1	4	_	+	+		4	1	T		ļ]	1
Tritium	400 210	ηo	۸	/ 2101	_	>	210 U		>	98	8	>	82	8	7	2100	7	2007	1	`	2012	_	<u>}</u>	1	1	1
Uranium 234 & 233	9.0	-	_						1		1	1	1	\dashv	\dashv	+	+	+	+	+	\downarrow	4	1	\downarrow	1	\downarrow
Uranium 235	9.0	-	_						7	-	-	1	+	+	+	+	+	+	+	+	+	$\frac{1}{1}$	1	1	1	1
Uranium 238	9.0		H			Ц					1	+	\dashv	\dashv	+	+	+	+	+	+	\downarrow	\downarrow	1	1	1	1
Plutonium 239 & 240	0.01		Н					1	1	1	1	1	\dashv	+	+	+	+	+	+	+	+	1	1	\downarrow	1	1
Americium 241 & 242	0.01				_					1	1	1	+	+	+	+	+	+	+	+	+	+	\downarrow	\downarrow	1	1
Radium 226	90'0		-					1	1	†	\dagger	\dagger	+	\dagger	+	+	+	+	+	+	+	\downarrow	1	1	1	\downarrow
Gamma scan			-	-	_			1	7	+	\dagger	+	\dagger	\dagger	\dagger	+	+	+	╀	+	1	1	\downarrow	$oldsymbol{\perp}$	\downarrow	\downarrow
Other Isotopes		4	\dashv	-						1	-	1	\dashv	1	\dashv	d	$\frac{1}{2}$	+	+	$\left\{ \right.$	$\frac{1}{2}$	-	-			-
												•				Δ		Data Qualifier	ifier							
Exceeds calibration range.	ange.		4	100	2	100100	<u> </u>									>		Valid								
U Indicates the parameter was not detected above the instrument during the parameter was not detected above the instrument during the control to	er was not detect	ad above	9119	nstrumer 4 duales			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									∢	A	ceptabl	e with	Acceptable with qualifications	ations					
Unanthation is approximate due to limitations identitied during the quality control leview	imate due to limite	gious ide		ם מתנונום	יונא הרמש	3	(A) (A)									α		Rejected								
• Value to selected the to other contractual criteria examined during the quality control review	o other contractue	d cateria	exem		ans gar	quanty	COLICA	review								:										

2939q3/rk12

Value is rejected due to other contractual criteria examined during the quality control review

Value is rejected due to blank contamination identified during the quality control review พวว.: นี

Detection Limit in PloaCuries per Liter (PCIAL)

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

Page 4 of

Ŋ

E88-3080/3rd Quarter 1988 SITE NAME: Rocky Flats Plant - East Trenches

Sample Location	Ö	25-87		25	25-87D		3-74			36-87			39-86			32-87		_	<u>p</u>		_	æ		Ш	8	
Sample Number	ř	3080-25-87	37	300	3080-25-87D	ا	3080-3-74	3-74		3080	3080-36-876		3080-39-86	39-86		3080-32-87	12-87		3080-TB	8	Ť	3080-FB	9	3	3080-EB	_
Sample Date	8	8/16/88		8/1	8/16/88		8/19/88	82		8/19/88	စ္တ		8/19/88	æ		8/23/88	8	7	8/23/88		~	8/23/88		8	8/23/88	
Mairix	<u>\$</u>	Water		Water	ter		Water			Water			Water			Water			Wader			Water		>	Weder	
Deremoler	DI.	, tel	<u>□</u>	DQ Val.	÷,	8	Val.	‡	Ø	Val.	*	8	Val.	+	οg -/+	Vai.	Val. +/- DQ		Vat. +/- DO	+		Val.	+	8	Val.	0 <u>0</u>
Gross Alpha	T.,	-	-	_	-	L																				
Gross Beta	4	-		-			Ц																			
Total Strontium	1		Н	Н															1	7		1	1	1	1	-
Total Cesium	1																		7		1	1	1	1		1
Radium 228	-														- 1				1	1	- 1		1	i	1	1
Tritium	400 210 U	10 U		V 210 U	n	>	230	8	>	310 U	8	>	200 U		>	210 U		>	2 82	7	>	⊃ 80	1	> >	210 U	<u> </u>
Uranium 234 & 233	9.0		Н	H														1	1	1	7	1	1	1	1	_
Uranium 235	9.0																			1	7		1	1		
Uranium 238	9.0																		1	7		1	1	1	-	1
Plutonium 239 & 240	0.01		Н															1	1	7	1	1	1	1	1	1
Americlum 241 & 242	0.01																	~	1	1	1	7	1	1	1	1
Radium 226	0.05																		1			1	1	+	1	7
Gamma scan		\dashv	\dashv	-	-	4														1		1	+	1	1	
Other Isotopes																			٦		1		+		1	-

Exceeds calibration range.

Indicates the parameter was not detected above the Instrument Quantitation Limit

Quantitation is approximate due to limitations identified during the quality control review

Acceptable with qualifications

0 0 > < ¤

Rejected

2939q3/rk12

Data Qualifier

Value is rejected due to other contractual criteria examined during the quality control review

Value is rejected due to blank contamination Identified during the quality control review шээ. : д

Detection Limit in Plocuries per Liter (pCI/L.)

Date: 10/11/89

RADIOCHEMICAL ANALYSIS ANALYTICAL RESULTS (PCI/L)

f

Page 5 of 5 E88-3080/3rd Quarter 1988 TABLE #: E88-3080/3rd Quarter 1: SITE NAME: Rocky Flats Plant - East Trenches

Sample Location	S	27-87		27.	27-87D		42-86		3	31-87								_			-		
Sample Number	8	3080-27-87	12	õ	3080-27-87D		3080-42-86	2-86	9	3080-31-87	87												
Sample Date	8	8/23/88		82	8/23/88		8/52/8	~	8	8/52/8											_		
Matrix	5	Water		×	Water		Water		^	Water													
	겁			-																			
Parameter	PCI/L	Val. +	Q -/+	DO Val.	al. +/-	g	Val.	+/	8	Val.	-	8											
Gross Alpha	2					Ш																	
Gross Beta	4		_																				
Total Strontlum	-	-																					
Total Cesium	-										-		-										1
Radium 228	-									-			_							1		-	-
Tritium	400 Z00 U	O 00		V 2001	nc	^	200 U		>	200 U		>		\dashv							\dashv	1	-
Uranium 234 & 233	9.0		L							-													
Uranium 235	9.0												-	-	_					1	-	1	-
Uranium 238	9'0										_			_							1	\dashv	-
Plutonium 239 & 240	0.01												\dashv	_					1	1	\dashv	1	
Americium 241 & 242	0.01	_												-					1	1		1	
Radium 226	0.05		\dashv						\dashv	1	+	-	\dashv	-	_			1	1	1	\dashv	1	\dashv
Gamma scan		-	\dashv	\dashv	_			7	1	1	1	4	-	-	1	_		1	1	1	+	+	+
Other Isotopes			_											_								-	-

Exceeds calibration range.

Indicates the parameter was not detected above the instrument Quantitation Limit

Quantitation is approximate due to limitations identified during the quality control review

Acceptable with qualifications Rejected

2939q3/rk12

Data Qualifier

Valid

8 > < œ

Value is rejected due to other contractual criteria examined during the quality control review

Value is rejected due to blank contamination identified during the quality control review

Date: 10/11/89

Rockwell ER Program Detection Limit in PicoCuries per Liter (PCIAL)

Rocky Flats Plant